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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/271,116	03/17/1999	NICHOLAS FRANK MAXEMCHUK	113545	3660

7590

09/27/2002

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EXAMINER

BADERMAN, SCOTT T

ART UNIT

PAPER NUMBER

2184

DATE MAILED: 09/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/271,116

Applicant(s)

MAXEMCHUK ET AL.

Examiner

Scott T Baderman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,9,10,13,14,17,18,21-30,33,34,37-43,45-48,50 and 51 is/are rejected.
- 7) ☒ Claim(s) 3,4,7,8,11,12,15,16,19,20,31,32,35,36,44 and 49 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 17 is objected to because of the following informalities: In line 7, "and" should be inserted after ";". Appropriate correction is required.
2. Claim 21 is objected to because of the following informalities: In line 15, "and" should be inserted after ";". Appropriate correction is required.
3. Claim 23 is objected to because of the following informalities: In line 10, "and" should be inserted after ";". Appropriate correction is required.
4. Claim 27 is objected to because of the following informalities: In line 3, "the multicast repair service" lacks antecedent basis. Appropriate correction is required.
5. Claim 28 is objected to because of the following informalities: In lines 3-4, "the multicast repair service" lacks antecedent basis. Appropriate correction is required.
6. Claim 42 is objected to because of the following informalities: In line 7, "and" should be inserted after ";". Appropriate correction is required.

7. Claim 47 is objected to because of the following informalities: In line 5, “and” should be inserted after “;”. Appropriate correction is required.

Allowable Subject Matter

8. Claims 3, 4, 7, 8, 11, 12, 15, 16, 19, 20, 31, 32, 35, 36, 44 and 49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 9, 17, 21, 23-29 and 38-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Maxemchuk et al. (IEEE).

As in claims 1 and 17, Maxemchuk discloses a network including a source of multicast packets in a multicast session and a plurality of multicast recipients in that session that comprises a repair server (client) in the network monitoring received ones of the packets to the recipients, wherein the repair server includes a missing packet detector, and a plurality of retransmit servers (servers) in the network buffering portions of the packets during the session, wherein the repair

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server detects missing packets and in response thereto, sequentially requests missing packets from respective ones of the plurality of retransmit servers (see pp. 260-265).

As in claims 9, 21, 29, 39 and 40, Maxemchuk discloses a network that inherently includes a long-haul portion with multicast enabled routers and non-multicast (unicast) enabled routers (interpreted as bypass portion – see p. 266), wherein the network further includes a source of multicast packets in a multicast session coupled to a first node (server) of the long-haul portion and a plurality of recipients in the session coupled to a second node (client) of the long-haul portion, that comprises 1) a repair server (client) monitoring received ones of the packets in the session to the recipients, wherein the repair server includes a missing packet detector, 2) a plurality of retransmit servers (servers) buffering portions of the packets during the session, wherein the repair server detects missing packets and in response thereto, sequentially requests missing packets from respective ones of the plurality of retransmit servers, and 3) an inherent unicast (bypass) message processor in at least one of the retransmit servers which retransmits in a unicast (bypass) session to the repair server at least a portion of the missing packets in response to the requests (pp. 260-265). Also, the fact that Maxemchuk discloses retransmitting packets in a unicast (bypass) session (p. 265, Figure 1), inherently teaches of non-multicast enabled routers in the long-haul portion, and further teaches that the multicast enabled routers in the long-haul portion will be circumvented when in the unicast (bypass) session.

As in claims 23 and 24, Maxemchuk discloses a method for repairing multicast packets in a network including a source of multicast packets in a multicast session and a plurality of

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multicast recipients in that session that comprises a 1) repair server (client) in the network monitoring received ones of the packets to the recipients, and 2) a plurality of retransmit servers (servers) in the network buffering portions of the packets during the session, wherein the repair server detects missing packets and in response thereto, sequentially requests missing packets from respective ones of the plurality of retransmit servers, and wherein a repaired multicast session which includes the missing packets is provided to the recipients without requiring a change to the multicast source or recipients (see pp. 260-265).

As in claim 25, Maxemchuk discloses providing both the original multicast session and the repaired multicast session to the recipients using different multicast addresses (p. 264).

As in claim 26, Maxemchuk discloses allowing the recipient to selectively subscribe to the repaired multicast session as a network supplied service (i.e., through the Internet service provider) (p. 266).

As in claim 27, Maxemchuk discloses limiting the recipient to receive the repaired multicast session as a network supplied service only if the recipient has subscribed to the multicast repair service (i.e., the multicast addresses used by the repair server are kept private) (p. 266).

As in claim 28, Maxemchuk discloses encrypting the repaired multicast session as a network supplied service and allowing the recipient access thereto only if the recipient has subscribed to the multicast repair service (p.266).

As in claim 38, Maxemchuk discloses that the bypass portion can be a private virtual network from the retransmit servers to the repair server (p. 266).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 2, 5, 6, 10, 13, 14, 18, 22, 30, 33, 34, 37 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxemchuk et al..

As in claims 2, 10, 18, 22, 30 and 41, Maxemchuk discloses that the objective of the system and method above is to recover packets that have been missed by some, but not all, of the cooperating receivers (a.k.a. retransmit servers). Maxemchuk further discloses the receiver selected to retransmit the packets should be the receiver (retransmit server) that is least likely to miss packets (see pp. 260, first column). However, Maxemchuk does not clearly disclose using

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an ordered “list” to determine which retransmit server is the most likely to have buffered copies of packets missing from the session.

It would have been obvious to a person skilled in the art at the time the invention was made to include a list to determine which retransmit server is the most likely to have buffered copies of packets missing from the session into the system taught by Maxemchuk above. This would have been obvious because Maxemchuk clearly teaches selecting a receiver (retransmit server) that is least likely to miss packets (see above), which would have suggested to a person skilled in the art that in order to be able to “select” from among a plurality of receivers (retransmit servers) to determine which one of them is the least likely to miss packets, some type of list of the receivers (retransmit servers) must be presented.

As in claims 5, 13 and 33, the fact that Maxemchuk discloses selecting a retransmit server that is “least likely” to miss packets (see above) is being interpreted as being the same as selecting a retransmit server based on the fraction of data packets lost by a retransmit server.

As in claims 6, 14 and 34, the fact that Maxemchuk discloses selecting a retransmit server that is “least likely” to miss packets (see above) is being interpreted as being the same as selecting a retransmit server based on the number of packets that have been lost by a retransmit server.

As in claim 37, Maxemchuk discloses the system in claim 29 above. However, Maxemchuk does not clearly disclose that the bypass portion can be a separate dial-up network from the retransmit servers to the repair server.

It would have been obvious to a person skilled in the art at the time the invention was made to include that the bypass portion can be a separate dial-up network from the retransmit servers to the repair server into the system taught by Maxemchuk above. This would have been obvious because Maxemchuk clearly teaches that the communication between the retransmit servers and the repair server can be provided through an Internet service provider (p. 266). A person skilled in the art would have understood that this connection could be a separate dial-up network since it is well known in the art that most Internet service providers provide this type of connection.

13. Claims 42, 43, 45-48, 50 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxemchuk et al. in view of Pejhan et al. (IEEE).

As in claims 42, 43, 45, 47, 48 and 50, Maxemchuk discloses a network including a source of multicast packets in a multicast session and a plurality of multicast recipients in that session that comprises a repair server (client) in the network monitoring received ones of the packets to the recipients, and a plurality of retransmit servers (servers) in the network buffering portions of the packets during the session, wherein the repair server detects missing packets and in response thereto, sequentially requests missing packets from respective ones of the plurality of retransmit servers (see pp. 260-265). However, Maxemchuk does not clearly disclose the

retransmit server transmitting enhanced reliability stream of packets. Pejhan discloses a system and method for error correcting multicast packets over a network wherein forward error correction (FEC) schemes (which includes packets being supplemented by redundant packets) are included with the packets (p.414).

It would have been obvious to a person skilled in the art at the time the invention was made to include that the retransmit server transmits enhanced reliability stream of packets into the system and method taught by Maxemchuk above. This would have been obvious because Pejhan clearly teaches that many experts desire enhanced reliability stream of packets like that taught above because retransmission schemes are impractical for wide area multimedia communications due to real-time constraints (p. 414).

As in claims 46 and 51, Maxemchuk discloses that the objective of the system and method above is to recover packets that have been missed by some, but not all, of the cooperating receivers (a.k.a. retransmit servers). Maxemchuk further discloses the receiver selected to retransmit the packets should be the receiver (retransmit server) that is least likely to miss packets (see pp. 260, first column). However, Maxemchuk does not clearly disclose using an ordered "list" to determine which retransmit server is the most likely to have buffered copies of packets missing from the session.

It would have been obvious to a person skilled in the art at the time the invention was made to include a list to determine which retransmit server is the most likely to have buffered copies of packets missing from the session into the system taught by Maxemchuk above. This would have been obvious because Maxemchuk clearly teaches selecting a receiver (retransmit

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server) that is least likely to miss packets (see above), which would have suggested to a person skilled in the art that in order to be able to “select” from among a plurality of receivers (retransmit servers) to determine which one of them is the least likely to miss packets, some type of list of the receivers (retransmit servers) must be presented.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

See Form PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott T Baderman whose telephone number is (703) 305-4644. The examiner can normally be reached on Monday-Friday, 6:45 AM-4:15 PM, first Fridays off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (703) 305-9713. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

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Scott T Baderman
Primary Examiner
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STB
September 25, 2002